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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/650,787

08/30/2000

Krishna Balachandran

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05/18/2004

PATTI & BRILL

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CHICAGO, IL 60602

EXAMINER

WONG, BLANCHE

ART UNIT

PAPER NUMBER

2667

DATE MAILED: 05/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/650,787

Applicant(s)

BALACHANDRAN ET AL.

Examiner

Blanche Wong

Art Unit

2667

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-6 and 12-14 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 4-6, 12 and 13 is/are rejected.
7) ☒ Claim(s) 14 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 3/4/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: lack of clarity in Amendment A of Office Action – paragraph 2-3.

-- top eight rows – can mean 0-7 or 1-8 in ln. 2 of the second paragraph of Amendment A of Office Action – paragraph 2-3. It follows in the same second paragraph that -- last two rows in the figure [are] (rows 9-10) --. Therefore, the top eight rows must be rows 1-8. However, in the third paragraph of Amendment A of Office Action – paragraph 2-3, it seems that the rows are labeled from 0-7, such as – the eight rows [are] ([rows] 0-7) --. Examiner suggests that top eight rows should be specified 0-7 or 1-8, and row numbering should be consistent.

01234/4567 interleaving is disclosed in third paragraph of Amendment A of Office Action – paragraph 2-3. In the same third paragraph, frames 5,6,7,0 are followed by frames 1,2,3,4. Therefore, the interleaving must be 5670/1234. However, the same third paragraph says -- This illustrates 0123/4567 interleaving – in ln. 7.

Appropriate correction is required for both rows and column numbering.

2. The disclosure is objected to because of the following informalities: another inadvertent error in Amendment A of Office Action – paragraph 7.

-- an inadvertent error in claim 20 – should read “an inadvertent error in Fig. 20.”
Claim 20 does not exist.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 4 and 13** rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear what is meant by "non-ideal frequency hopping" in In. 7-8 and In. 2-3 respectively. ✓

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 4-6,12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Delprat et al. (U.S. Pat No. 5,398,247) in view of admitted prior art.

With regard to claims 4-6,12, Delprat discloses a system for communicating using wireless time division multiplexed communications (col. 1, In. 6) in which time is divided into a plurality of frames (Framing is an inherent property of TDM.) and each frame is divided into N data bursts (col.1, In. 7-11, "a physical transmission channel is time-divided into a plurality of logic channels which may be assigned to different

communications, each logic channel consisting of time slots having a same serial number in successive frames of constant length")(In the application, burst is defined as a transmission in a slot and block is equal to 4 bursts on the same slot. p.1, ln. 30-p.2, ln.14), said system comprising: means for defining a channel as a series of bursts that occur periodically every N bursts once per frame (col.1, ln. 39-40, "It can be seen that the time distribution of the allocated time slots remains regular..."), where N is a positive integer; means for defining a sub-channel as every Mth burst of said channel (col.2, ln.43-48, "one of the logic channels is divided into a plurality of sub-channels dedicated to different communications, characterized by assigning specific groups each of k successive time slots to each logic sub-channel, said groups being regularly time distributed..."); and means for transmitting digital information over said channel from a first station to a second station (A TDMA radio-communication method such as Delprat is an inherent property of a communication system between two stations.).

However, Delprat fails to explicitly show a system wherein 0246/1357 interleaving is used, as recited in claims 4-6. Admitted prior art, on p. 2, ln. 24-25 of the Specification, discloses that presently under GSM, a mobile user assigned to some channels has to receive on even bursts in one multi-frame and odd-bursts in the next multiframe. Therefore, the scheme, 0246 being even and 1357 being odd, are used with the current GSM. No unexpected result can be seen with 0246/1357 interleaving.

A person of ordinary skill in the art would have been motivated to employ admitted prior art in Delprat in order to obtain uplink and downlink channels. The suggestion/motivation to do so would have been to allow multiplex communication.

Specification, p.2, ln. 15-30. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Delprat and admitted prior art to obtain the invention as specified in claim 4.

With regard to claims 4-6, Delprat also fails to expressly show improved link performance provided by 0246/1357 interleaving, as recited in claim 4; a lower delay to the start of a talkspurt than 0123/4567 interleaving, as recited in claim 5; and larger resource pools for statistical multiplexing under half duplex constraints imposed by mobile stations provided by 0123/4567 interleaving, as recited in claim 6. These are conveniences as a result of 0246/1357 interleaving. Because no unexpected result can be seen with 0246/1357 interleaving, these conveniences are not considered. Furthermore, conveniences are not limitations to the claims.

With regard to claim 12, Delprat also discloses transmitting the interleaved bursts from a first station to a second station (A TDMA radio-communication method such as Delprat is an inherent property of a communication system between two stations.).

Allowable Subject Matter

7. **Claim 14** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dupuy (U.S. Pat No. 6,469,996) discloses a method of allocating transmission channels, using down frames 0-3 and up frames 4-7. Col. 4, ln. 6-16.

Izumi (U.S. Pat No. 6,577,641) discloses a method and means for allocating time slots, using transmitting time slot 1 and receiving time slot 2. Col. 4, ln. 23-24.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blanche Wong whose telephone number is 703-305-8963. The examiner can normally be reached on Monday through Friday, 830am to 530pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H Pham can be reached on 703-305-4378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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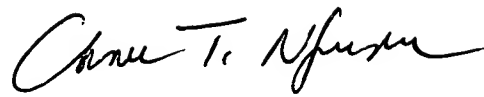
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May 10, 2004



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